

REMARKS

Applicants acknowledge with appreciation the Examiner's indication of allowability for claims 19, 20, 24, and 25; these claims have been amended to be in independent form, including the limitations of the base and intervening claims, and are in immediate condition for allowance. Claims 1, 5, 9, 15, 19, and 24 have been amended. New claims 26-30 are added. Please consider the following remarks.

Claims 1-3, 5-7, 9, 11-16, 18, 21, and 22 stand rejected under 35 U.S.C. § 103(a) over U.S. patent 6,661,866 ("Limkeman et al.") in view of U.S. patent 6,175,611 ("Melen et al."). Applicants respectfully traverse this rejection.

Claim 1, as amended, defines a radiological imaging apparatus and recites "a detector support member which extends in the longitudinal direction of a bed for supporting an examinee and is arranged around said bed;" and "a radiation detection apparatus including a plurality of radiation detector units arranged in the longitudinal direction of said bed and around said bed, said plurality of detector units being attached to said detector support member in a detachable manner, wherein said detector unit comprises a plurality of radiation detectors for detecting radiation and a plurality of said radiation detectors are arranged in a radius direction of said detector support member;" and "a γ -ray detection signal processing apparatus for obtaining positional information of said radiation detectors outputting γ -ray detection signals, said radiation detectors outputting γ -ray detection signals being arranged in said radius direction." This is not taught or suggested by Limkeman et al. and Melen et al.

Limkeman et al. does not teach or suggest that "detector units [are] attached to [a] detector support member in a detachable manner," as acknowledged in the Office Action (page 3). Additionally, Limkeman et al. fails to teach or suggest that "a plurality

of said radiation detectors are arranged in a radius direction of said detector support member" and that, since they are part of "radiation detector units" these radiation detectors are also "arranged in the longitudinal direction of [a] bed and around said bed," as recited by claim 1. Further, even though Limkeman et al. discloses that a PET processor is part of its system, the disclosure makes no mention that this processor is for "obtaining positional information of said radiation detectors outputting γ -ray detection signals;" no such outputting of γ -ray detection signals is taught or suggested. Additionally, since Limkeman et al. fails to teach or suggest that radiation detectors output γ -ray detection signals, it also necessarily fails to teach or suggest that such detectors are among those "arranged in said radius direction."

Melen et al. cannot remedy the deficiencies of Limkeman et al. with respect to the claimed apparatus. Melen et al., like Limkeman et al., does not teach or suggest the arrangement of radiation detectors in a "radius direction" and also in a "longitudinal direction" as well as "around [a] bed." Also, Melen et al., like Limkeman et al., fails to teach or suggest the recited " γ -ray detection signal processing apparatus" or "radiation detectors outputting γ -ray detection signals." Melen et al. focuses exclusively on X-ray detection and imaging. And, as with Limkeman et al., Melen et al. does not teach or suggest that radiation detectors outputting γ -ray detection signals "are arranged in said radius direction."

For each of the above reasons, the subject matter of independent claim 1 and dependent claims 2-4 is patentable over Limkeman et al. and Melen et al., whether taken individually or in combination. Applicants respectfully request that the 35 U.S.C. § 103(a) rejection of claims 1-3 be withdrawn.

Claim 5, as amended, defines a radiological imaging apparatus and recites “a ring-shaped detector support member which extends in the longitudinal direction of a bed for supporting an examinee and is arranged around said bed;” and “a radiation detection apparatus including a plurality of radiation detector units arranged in the longitudinal direction of said bed and in the circumferential direction of said detector support member which includes said plurality of detector units attached to said detector support member in a detachable manner, wherein said detector unit comprises a plurality of radiation detectors for detecting radiation and is provided with a plurality of said radiation detectors in different positions in the radius direction of said detector support member;” and “a γ -ray detection signal processing apparatus for obtaining positional information of said radiation detectors outputting γ -ray detection signals, said radiation detectors being arranged in said radius direction.” Such a device is not taught or suggested by Limkeman et al. and Melen et al.

Independent claim 5 recites similar, although not identical, subject matter as that of independent claim 1. For example, claim 5 recites the “longitudinal direction,” and “circumferential direction,” and “radius direction” arrangement of “radiation detectors,” which is discussed above as not taught or suggested by either Limkeman et al. or Melen et al. Additionally, claim 5 also recites “ γ -ray detection signal processing apparatus” and “radiation detectors outputting γ -ray detection signals” and that these are “arranged in said radius direction.” As discussed above, none of these features is taught or suggested by the references. Therefore, for at least the same reasoning set forth above for the patentability of claim 1, independent claim 5 and dependent claims 6-8 are likewise patentable over Limkeman et al. and Melen et al. Applicants respectfully request that the 35 U.S.C. § 103(a) rejection of claims 5-7 be withdrawn.

Claim 9, as amended, defines, a radiological imaging apparatus and recites “a detector support member which extends in the longitudinal direction of a bed for supporting an examinee and is arranged around said bed;” and “a radiation detection apparatus including a plurality of radiation detector units arranged in the longitudinal direction of said bed and around said bed, said plurality of detector units being attached to said detector support member in a detachable manner, wherein each said detector unit is provided with a plurality of radiation detectors which detect γ -rays and is arranged in a radius direction of said detector support member;” and “a signal processing apparatus for processing γ -ray detection signals outputted from said radiation detectors and for obtaining positional information of said radiation detectors outputting γ -ray detection signals on the basis of said γ -ray detection signals, said radiation detectors being arranged in said radius direction.” Such a device is not taught or suggested by Limkeman et al. and Melen et al.

Independent claim 9 recites similar, although not identical, subject matter as that of independent claims 1 and 5. For example, claim 9 recites the “longitudinal direction,” and “around,” and “radius direction” arrangement of “radiation detectors,” which is discussed above as not taught or suggested by either Limkeman et al. or Melen et al. Claim 9 also recites “radiation detectors which detect γ -rays” that are “arranged in a radius direction;” not taught or suggested by the references. Additionally, claim 9 also recites “signal processing apparatus for processing γ -ray detection signals” and “radiation detectors” that output those γ -ray detection signals and that these are “arranged in said radius direction.” As discussed above, none of these features is taught or suggested by the references. Therefore, for at least the same reasoning set forth above for the patentability of claim 1, independent claim 9 and dependent claims 10-15 are likewise patentable over Limkeman et al. and Melen et al. Applicants

respectfully request that the 35 U.S.C. § 103(a) rejection of claims 9 and 11-15 be withdrawn.

Claim 16, as amended, defines a radiological imaging apparatus and recites “a detector support member which extends in the longitudinal direction of a bed for supporting an examinee and is arranged around said bed;” and “an X-ray source which moves around said bed and radiates X-rays;” and “a radiation detection apparatus including a plurality of radiation detector units arranged in the longitudinal direction of said bed and around said bed, said plurality of detector units being attached to said detector support member in a detachable manner, wherein said detector units are provided with a plurality of radiation detectors for detecting radiation, and said radiation detectors are arranged in a radius direction of said radiation detector support member, and at least one of said radiation detectors outputs X-ray detection signals and γ -ray detection signals;” and “a γ -ray detection signal processing apparatus for obtaining positional information of said radiation detectors outputting γ -ray detection signals, said radiation detectors being arranged in said radius direction.” Such a device is not taught or suggested by Limkeman et al. and Melen et al.

Independent claim 16 recites similar, although not identical, subject matter as that of independent claims 1, 5, and 9. For example, claim 16 recites the “longitudinal direction,” and “around,” and “radius direction” arrangement of “radiation detectors,” which is discussed above as not taught or suggested by either Limkeman et al. or Melen et al. Additionally, claim 16 also recites “ γ -ray detection signal processing apparatus” and “radiation detectors outputting γ -ray detection signals” and that these are “arranged in said radius direction.” As discussed above, none of these features is taught or suggested by the references. Additionally, claim 16 recites that “at least one of said radiation detectors outputs X-ray detection signals and γ -ray detection signals,”

which is clearly not taught or suggested by either reference. Therefore, for at least the same reasoning set forth above for the patentability of claim 1, and for additional reasoning, independent claim 16 and dependent claims 17, 18, and 21-23 are likewise patentable over Limkeman et al. and Melen et al. Applicants respectfully request that the 35 U.S.C. § 103(a) rejection of claims 16, 18, 21, and 22 be withdrawn.

Claims 4, 8, 10, 17, and 23 stand rejected over Limkeman et al. in view of Melen et al. and further in view of U.S. patent 6,448,559 ("Saoudi et al."). Applicants respectfully traverse this rejection.

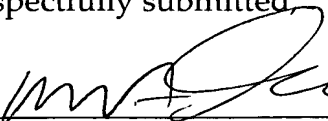
Claims 4 depends from independent claim 1, claim 8 depends from independent claim 5, claim 10 depends from independent claim 9, and claims 17 and 23 depend from independent claim 16, each of which has already been discussed above as being patentable over Limkeman et al. and Melen et al. The Saoudi et al. references is cited in the Office Action for its alleged disclosure of "semiconductor radiation detectors." Even if Saoudi et al. does disclose such subject matter, which Applicants do not concede it does with respect to the claimed invention, Saoudi et al. fails to supplement Limkeman et al. and Melen et al. for all of the other deficiencies in their disclosures with regard to other elements of the claims.

For at least the reasons set forth above, even if Saoudi et al. were combined with the other references, such combination would still fail to render the subject matter of claims 1, 5, 9, and 16 obvious. Applicants respectfully request that the 35 U.S.C. § 103(a) rejection of claims 4, 8, 10, 17, and 23 be withdrawn.

In view of the above amendment and remarks, Applicants believe the pending application is in condition for allowance. A notice of allowance is respectfully requested.

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Respectfully submitted

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